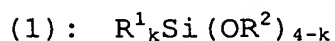


## CLAIMS

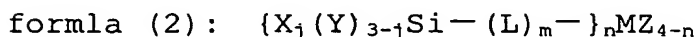
1. A composition for forming a porous film comprising a condensation product and an organic solvent wherein the condensation product is obtained by hydrolysis and condensation, in the presence of a basic catalyst, of

one or more silane compounds represented by formula



wherein  $R^1$  represents an organic group having 1 to 8 carbons, and when there are two or more  $R^1$ 's, the  $R^1$ 's may be independently same or different;  $R^2$  represents an alkyl group having 1 to 4 carbons, and when there are two or more  $R^2$ 's, the  $R^2$ 's may be independently same or different; and  $k$  is an integer from 0 to 3;

and one or more crosslinking agents represented by



wherein  $X$  represents a hydrogen atom, a halogen atom or an alkoxy group having 1 to 4 carbons;  $Y$  represents a hydrogen atom, an alkyl group having 1 to 4 carbons or a phenyl;  $Z$  represents a hydrogen atom, a halogen atom, an alkyl group having 1 to 4 carbons, an alkoxy group having 1 to 4 carbons or a phenyl;  $L$  represents a linear or branched alkylene group having 1 to 6 carbons, an alkenylene having 1 to 6 carbons, an alkynylene having 1 to 6 carbons or a phenylene group;  $M$  represents a carbon atom or a silicon atom;  $j$  is an integer from 1 to 3;  $m$  is 0 or 1; and  $n$  is 3 or 4.

2. The composition for forming a porous film according to Claim 1 wherein said basic catalyst is quaternary ammonium hydroxide.

3. The composition for forming a porous film according to Claim 2 wherein said quaternary ammonium hydroxide is selected from the group consisting of tetramethylammonium hydroxide, choline and tetrapropylammonium hydroxide.

4. A method for manufacturing a porous film comprising steps of applying said composition according to any one of Claims 1 to 3 on a substrate so as to form a film thereon, drying the film and heating the dried film so as to cure the film.

5. A porous film formable by said composition according any one of Claims 1 to 3.

6. An interlevel insulating film formable by said composition according to any one of Claims 1 to 3.

7. A semiconductor device comprising a porous film therein, the porous film being formable by a composition comprising a condensation product and an organic solvent wherein the condensation product is obtained by hydrolysis and condensation, in the presence of a basic catalyst, of

one or more silane compounds represented by formula



wherein  $R^1$  represents an organic group having 1 to 8 carbons, and when there are two or more  $R^1$ 's, the  $R^1$ 's may be

independently same or different;  $R^2$  represents an alkyl group having 1 to 4 carbons, and when there are two or more  $R^2$ s, the  $R^2$ s may be independently same or different; and k is an integer from 0 to 3;

and one or more crosslinking agents represented by formula (2):  $\{X_j(Y)_{3-j}Si-(L)_m-\}_nMZ_{4-n}$  wherein X represents a hydrogen atom, a halogen atom or an alkoxy group having 1 to 4 carbons; Y represents a hydrogen atom, an alkyl group having 1 to 4 carbons or a phenyl; Z represents a hydrogen atom, a halogen atom, an alkyl group having 1 to 4 carbons, an alkoxy group having 1 to 4 carbons or a phenyl; L represents a linear or branched alkylene group having 1 to 6 carbons, an alkenylene having 1 to 6 carbons, an alkynylene having 1 to 6 carbons or a phenylene group; M represents a carbon atom or a silicon atom; j is an integer from 1 to 3; m is 0 or 1; and n is 3 or 4.

8. The semiconductor device according to Claim 7 wherein said basic catalyst is quaternary ammonium hydroxide.

9. The semiconductor device according to Claim 7 wherein said quaternary ammonium hydroxide is selected from the group consisting of tetramethylammonium hydroxide, choline and tetrapropylammonium hydroxide.

10. The semiconductor device according to any one of Claims 7 to 9 wherein said porous film is between metal interconnections in a same layer of multi-level interconnects,

or is between upper and lower metal interconnection layers.